CLAIMS

What is claimed is:

1. A method for coordinating the use of beam forming between two communicating entities wherein control information regarding the use of beam forming is not communicated between the two entities, the method comprising the steps of:

selecting one of the two communicating entities for reduction of its beam adjustment;

measuring an error in the alignment of beams emanating from the two communicating entities; and

adjusting the beam of the selected entity in an amount equal to a fraction of the error measured.

2. The method of claim 1 wherein the two communicating entities are a base station and a WTRU.

3. The method of claim 1 wherein the two communicating entities are two WTRUs.

4. The method of claim 1 further comprising the step of:

repeating the measuring and adjusting steps until the error measured is below a predetermined value.

5. The method of claim 1 wherein the fraction is 0.5.

6. The method of claim 1 wherein the error measurement and beam adjustment is performed in the azimuth dimension.

7. The method of claim 1 wherein the error measurement and beam adjustment is performed in the elevation dimension.

8. The method of claim 1 wherein the error measurement and beam adjustment is performed in the azimuth and elevation dimensions.

9. A method for coordinating the use of beam forming between two communicating entities wherein control information regarding the use of beam forming is communicated between the two entities, the method comprising the steps of:

selecting a correction factor for each of the entities wherein the sum of the two correction factors is equal to one;

measuring an error in the alignment of beams emanating from the two communicating entities;

communicating the correction measurement between the entities; and

adjusting the beam of both entities according to their respective correction factors.

10. The method of claim 9 wherein the two communicating entities are a base station and a WTRU.

11. The method of claim 9 wherein the two communicating entities are two WTRUs.

12. The method of claim 9 wherein the error measurement and beam adjustment is performed in the azimuth dimension.

13. The method of claim 9 wherein the error measurement and beam adjustment is performed in the elevation dimension.

14. The method of claim 9 wherein the error measurement and beam adjustment is performed in the azimuth and elevation dimensions.

15. The method of claim 9 wherein the correction factor of one entity is zero thereby causing said entity to refrain from adjusting its beam.

16. A method for coordinating the use of beam forming between two communicating entities wherein control information regarding the use of beam forming is not communicated between the two entities, the method comprising the steps of:

selecting one of the two communicating entities for reduction of its beam adjustment;

measuring an error in the alignment of beams emanating from the two communicating entities; and

refraining from adjusting the beam of the selected entity.

17. A method for coordinating the use of beam forming between two communicating entities wherein control information regarding the use of beam forming is communicated between the two entities, the method comprising the steps of:

selecting a first correction factor for each of the entities for use in the azimuth dimension wherein the sum of the two first correction factors is equal to one;

selecting a second correction factor for each of the entities for use in the elevation dimension wherein the sum of the two second correction factors is equal to one;

measuring an error in the alignment of beams emanating from the two communicating entities in the azimuth dimension;

measuring an error in the alignment of beams emanating from the two communicating entities in the elevation dimension;

adjusting the beam of both entities according to their respective first correction factors wherein an error is detected in the azimuth dimension; and

adjusting the beam of both entities according to their respective second correction factors wherein an error is detected in the elevation dimension.

18. A method for coordinating the use of beam forming between two communicating entities wherein control information regarding the use of beam forming is communicated between the two entities, the method comprising the steps of:

selecting a correction factor for each of the entities;

each entity measuring an error in the alignment of beams emanating from the two communicating entities; and

adjusting the beam of both entities according to their respective correction factors and error measurement.

19. The method of claim 18 wherein the two communicating entities are a base station and a WTRU.

20. The method of claim 18 wherein the two communicating entities are two WTRUs.

21. The method of claim 18 wherein the error measurement and beam adjustment is performed in the azimuth dimension.

22. The method of claim 18 wherein the error measurement and beam adjustment is performed in the elevation dimension.

23. The method of claim 18 wherein the error measurement and beam adjustment is performed in the azimuth and elevation dimensions.

24. The method of claim 18 wherein the correction factor of one entity is zero thereby causing said entity to refrain from adjusting its beam.

25. A wireless communication system wherein beams may be adjusted to enhance wireless communications between wireless entities operating in the

system, the wireless communication system comprising:

a plurality of wireless entities, said entities being capable of communicating using beam formed transmission and reception patterns and including a processor for measuring an error in the alignment of their own beam and the beam of another entity with which they are communicating; and

wherein at least one of two communicating wireless entities adjusts its beam a fraction of the error measured in the alignment of its beam with respect to the beam of the other wireless entity.

26. The wireless communication system of claim 25 wherein the processor of the at least one communicating wireless entity is configured to adjust the beam of the at least one wireless entity in an amount equal to the fraction multiplied by the error measured.

27. The wireless communication system of claim 26 wherein a first of the two communicating wireless entities includes a transmitter configured to transmit the fraction to a second of the two communicating wireless entities.

28. The wireless communication system of claim 27 wherein the second wireless entity includes a receiver configured to receive the fraction and further includes a processor to adjust the beam of the second wireless entity in an amount equal to one minus the fraction multiplied by the error measured.

29. The wireless communication system of claim 28 wherein the first wireless entity is a WTRU and the second wireless entity is a WTRU.

30. The wireless communication system of claim 28 wherein the first wireless entity is a WTRU and the second wireless entity is a base station.

31. A wireless transmit/receive unit (WTRU) configured to maintain alignment of its beam with the beam of another wireless entity with which the WTRU is communicating, the WTRU comprising:

a first processor configured to measure an error in the alignment of a first beam emanating from the WTRU and a second beam emanating from the other wireless entity; and

a second processor configured to compute a first fraction and adjust the first beam in an amount equal to the first fraction multiplied by the error measured.

32. The WTRU of claim 31 further comprising:

a transmitter configured to transmit the fraction of the measured error that the WTRU will adjust its beam to the wireless entity with which the WTRU is communicating.

33. The WTRU of claim 32 further comprising:

a receiver configured to receive, from the wireless entity with which the WTRU is communicating, a second fraction with which the entity used to adjusts its beam; and

wherein when a second fraction is received, the second processor being configured to compute the first fraction by subtracting one minus the second fraction and adjusting the first beam in an amount equal to the first fraction multiplied by the error measured.

34. The WTRU of claim 33 wherein the wireless entity with which the WTRU is communicating is another WTRU.

35. The WTRU of claim 33 wherein the wireless entity with which the WTRU is communicating is a base station.